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ABSTRACT

This paper provides an overview of different electronic portfolio development tools and introduces a strategy for using Portable Document Format (Adobe Acrobat PDF) files to store and organize electronic teaching portfolios. A 12-step process for constructing electronic portfolios is described, as are storing the working portfolio, publishing the presentation (formal) portfolio, and authoring tools for multimedia portfolios. A list is provided of topics for training sessions that are being offered to students at the University of Alaska Anchorage School of Education to develop electronic porfolios, using Adobe Acrobat and either CD-ROM or videotape as the publishing medium. Standards for electronic portfolios are also discussed. (Contains 3 tables and 32 references.) (AEF)

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ELECTRONIC TEACHING PORTFOLIOS

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Abstract: As we move to more standards-based teacher performance assessment, we need new tools to record and organize evidence of successful teaching, for both practicing professionals and student teachers. This session will provide an overview of different electronic portfolio development tools and will introduce a strategy for using Portable Document Format (Adobe Acrobat PDF) files to store and organize Electronic Teaching Portfolios.

1. Introduction

This paper will briefly cover various strategies for authoring electronic portfolios and design for an electronic teaching portfolio, including goals/purpose of the portfolio, evaluation criteria, audience, content, context and multimedia materials to include in the portfolio. One strategy often overlooked in the development of electronic portfolios is the use of Adobe Acrobat 's Portable Document Format (PDF) to gather evidence from a variety of applications. There are other authoring software packages which allow the creation of hypertext links between goals, student work samples in multiple forms of media, rubrics, and assessment. The software used to create the electronic portfolio will control, restrict, or enhance the portfolio development process. Form should follow function as well, and the electronic portfolio software selected should match the vision, style and skills of the portfolio developer, as well as the technology available.

2. Background

A **portfolio** is a purposeful collection of student work that demonstrates effort, progress and achievement; a portfolio provides a richer picture of student performance than can be gained from more traditional, objective forms of assessment. Most traditional standards-based portfolios are 3-ring notebooks, organized with dividers and sections for paper-based documents demonstrating each standard. An **Electronic Portfolio** uses multimedia technology allowing students/teachers to collect and organize portfolio artifacts in many media types (audio, video, graphics, text) with hypermedia links connecting that evidence to the appropriate standards. Students/teachers can publish their Electronic Portfolios on CD-Recordable discs, video tape or the Internet. The benefits of Electronic Portfolios over traditional paper-based portfolios are:

1. Makes student work in many media accessible, portable, examinable, widely distributable
2. Makes performances replayable and reviewable; it is important to see more than once
3. Hypertext links allow clear connections between standards and portfolio artifacts
4. Creating an Electronic Portfolio can develop skills in using multimedia technologies
5. A teacher with an electronic portfolio will be more likely to have students with electronic portfolios.
6. It's easier to manage the portfolio process, especially storage, presentation, and duplication

3. Process for Constructing Electronic Portfolios

At the 1997 SITE Conference, Boulware, Bratina, Holt & Johnson described a process for developing Pre-Service Teacher Portfolio Process which was based on a portfolio development manual published by Campbell, Cignetti, Melenyzer, Nettles & Wyman (1997):

- Distinguish between a working and a presentation portfolio;
- Organize a working portfolio according to standards;
- Identify artifacts that denote accomplishments for each standard; and
- Produce a working portfolio.

In an article that was published in the Proceedings of the National Educational Computing Conference (1997) and updated in the October, 1998 issue of *Learning & Leading with Technology*, I outlined a process for developing electronic portfolios in contrast to the process normally used to develop multimedia presentations:

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- decide on goals of portfolio based on learner outcome goals that should be based on national/state/local **standards** with associated evaluation rubrics
- decide on and describe the assessment **context**
- decide on and describe the **audience**(s) for the portfolio (student, parent, college, community?)
- decide on **content** of portfolio items (determined by context)
- decide which software **tools** are most appropriate for the portfolio context
- decide which **storage** and **presentation medium** is most appropriate for the situation
- gather **multimedia materials** to include in the portfolio which represent learner's achievement (preferably linked to standards, preferably in a relational database)
- record **student self-reflection** on work and achievement of goals
- record **teacher feedback** on student work and achievement of goals
- organize with **hypermedia links** between goals, student work samples, rubrics, and assessment
- **present** portfolio to appropriate audience (by student, in age-appropriate situations)
- **evaluate** effectiveness of portfolio related to the purpose and assessment context

3.1. Storing the Working Portfolio

There are many technologies that can be used to store digital portfolio artifacts during the development stages. Some of the most common include:

- Computer diskette
- CD-Recordable (CD-R) & CD-ReWritable (CD-RW)
- Video Tape
- High density floppy (Zip disk)
- WWW or Intranet
- Jaz disk
- DVD-RAM (coming soon)

3.2. Publishing the Presentation (Formal) Portfolio

Many of those same strategies will be used to publish the formal or presentation portfolio, including CD-R, Video Tape, WWW, DVD-RAM . The choice depends on the audience for the portfolio.

3.3. Authoring Tools for Multimedia Portfolios

It is important to choose software tools that allow teachers and students to create **hypertext links** between goals, outcomes and the various student artifacts (products and projects) displayed in multimedia format that demonstrate their achievement. Although there are some very good commercial electronic portfolio programs on the market, they often reflect the developer's style or are constrained by the limits of the software structure. I have found that many electronic portfolio developers want the freedom to create their own portfolio structure using appropriate off-the-shelf software.

3.3.1. Generic Construction Tools (off-the-shelf software)

There are a number of generic types of software with examples shown of brand name products.

- **Relational Data Bases**, such as FileMaker Pro 4.0 or Microsoft Access
- **Hypermedia "card" formats**, such as HyperStudio, HyperCard, Digital Chisel, or SuperLink + commercial electronic portfolio templates available.
- **Multimedia authoring software**, such as Macromedia Authorware, Macromedia Director
- **Network-compatible hypermedia**:
    - **HTML**/WWW Pages
    - **Adobe Acrobat** (PDF)
- **Office "Suite" Multimedia slide shows**, such as Microsoft PowerPoint, AppleWorks

3.3.2. Commercial Portfolio Software Packages

There are several commercial software packages that I think are appropriate for electronic teaching portfolios:

- **Grady Profile** (Aurbach & Associates) http://www.aurbach.com/ - a brand new **Teacher Portfolio**
- **Persona Plus** - http://www.personaplus.com

4. Skills for developing Electronic Portfolios

The skills necessary to develop an electronic portfolio are the same for developing multimedia presentations. Below is a list of topics for training sessions that are being offered to students at the University of Alaska Anchorage School of Education, to develop Electronic Portfolios, using Adobe Acrobat and either CD-ROM or video tape as the publishing medium.:

1. Converting files from any application to PDF using PDFWriter or Acrobat Distiller
2. Scanning/capturing and editing graphic images
3. Digitizing and editing sound files
4. Digitizing and editing video files (VCR -> computer)
5. Organizing portfolio artifacts with Acrobat Exchange, creating links & buttons
6. Organizing multimedia files and pre-mastering CD-ROM using Jaz disks
7. Writing CD-Recordable disc using appropriate CD mastering software
8. Recording computer images with narration to video tape (computer -> VCR)

5. Electronic Portfolios and Standards

As I attend presentations at national and regional conferences, I see a lot of variations on the technologies used to develop electronic portfolios, but very little linkage to the actual benchmarks that students are supposed to be demonstrating. Too many of the current examples of electronic portfolios, both "classroom-grown" and commercial, focus on the glitz and glamour of high tech multimedia; very few commercial programs provide the capability of directly linking students' digital portfolio artifacts to the standards for which they demonstrate achievement. Most states have adopted standards for both students, practicing teachers, and new teachers. These standards form an ideal framework for organizing an electronic portfolio. I propose that a portfolio without standards is just a multimedia presentation or a fancy electronic resume or a digital scrapbook. Without standards as the organizing basis for a portfolio, the collection becomes just that...a collection, haphazard and without structure; the purpose is lost in the noise, glitz and hype. High technology disconnected from a focus on curriculum standards will only exacerbate the lack of meaningful integration of technology into teaching and learning. *(portions of this section were originally published in the Proceedings of the Tel-Ed 98 Conference)*

6. Conclusions

Electronic portfolios are a unique way to document student progress, encourage improvement and motivate involvement in learning. There are a variety of tools for constructing electronic teaching portfolios. The choice of software can either restrict or enhance the development process and the quality of the final product. I have posted another web-based article (noted in the Web References below) which outlines in more detail the advantages and disadvantages of each of the "off-the-shelf" development tools. Online research using these tools is now being conducted to determine the best technological strategy to use, based on a variety of human and technological factors. Results will be reported at future SITE conferences and posted on-line at http://transition.alaska.edu/www/portfolios.html.

7. References

Articles

Barrett, Helen (1998). Strategic Questions. *Learning & Leading with Technology* (October, 1998)

Boulware, Bratina, Holt & Johnson (1997). Developing Professional Teaching Portfolios Using CD-ROM Technology as a Teaching-Learning Tool. *SITE, 1997*. http://www.unf.edu/~tbratina/cdrom.htm

Books

Baron, Cynthia (1996). *Creating a Digital Portfolio*. Indianapolis: Hayden Books
Brown, Genevieve and Irby, Beverly (1997). *The Principal Portfolio*. Thousand Oaks: Corwin Press
Burke, Kay (1997). *Designing Professional Portfolios for Change*. Palatine, Illinois: IRI/SkyLight Training & Publishing
Burke, Kay (ed.) (1996). *Professional Portfolios*. Palatine, Illinois: IRI/SkyLight Training & Publishing
Campbell, Cignetti, Melenyzer, Nettles & Wyman (1997). *How to Develop a Professional Portfolio: A Manual for Teachers*. California University of Pennsylvania.
Glatthorn, Allan (1996). *The Teacher's Portfolio: Fostering and Documenting Professional Development*. Rockport, MA: Pro>Active Publications.
Lyons, Nona (ed.) (1998).*With Portfolio in Hand: validating the new teacher professionalism*. New York: Teachers College Press.
Martin-Kniep, Giselle (1998). *Why Am I Doing This? Purposeful Teaching through Portfolio Assessment*. Portsmouth: Heinemann
McLaughlin, Maureen; Vogt, MaryEllen (1996). *Portfolios in Teacher Education*. Newark: International Reading Association.
McLaughlin, Vogt, Anderson, DuMez, Peter, Hunter (1998). *Professional Portfolio Models: Reflections Across the Teaching Profession*. Norwood, MA: Christopher-Gordon Publishers.
Paris, Scott; Ayres, Linda R. (1994). *Becoming Reflective Students and Teachers with Portfolios and Authentic Assessment*. Washington, D.C.: American Psychological Association.
Seldin, Peter (1997). *The Teaching Portfolio*. Bolton: Anker Publishing

Web References

Barrett, Helen (in process) Create Your Own Electronic Portfolio using off-the-shelf software. [Online] Available: http://transition.alaska.edu/www/portfolios/toolsarticle.html [1998, November 16]
Boulware, Bratina, Holt & Johnson (1997) Developing Professional Teaching Portfolios Using CD-ROM Technology as a Teaching-Learning Tool SITE, 1997. [Online] Available: http://www.unf.edu/~tbratina/cdrom.htm [1997, November 22].
Caldwell, Wendy (1996) Creating a Teaching Portfolio [Online] Available: http://www.rom.uga.edu/wcaldwell/presenta.htm [1997, November 22].
Center for Teaching Excellence, Iowa State University (1997) How to Document Your Teaching [Online] Available: http://teach.admin.iastate.edu/CTE/port.html [1997, November 22].
Chang, Paul (1997) Suggested Contents of a Teaching Portfolio [Online] Available: http://www.unc.edu/~edci/portfoli.htm [1997, November 22].
Doolittle, Peter (1994) Teacher Portfolio Assessment ERIC/AE Digest. ERIC Clearinghouse on Assessment and Evaluation, Washington, D.C. ED385608 [Online] Available: http://www.spectra.net/~cfthree/portfolio/DOCS/portfolio2.html [1997, November 22].also [Online] Available: http://ericae.net/db/digs/ed385608.htm [1997, December 12].
Cook, D., & Kessler, J. (1994) "The Professional Teaching Portfolio" http://www.mnsfld.edu/~mlambert/prosem/portfolio.html [1997, November 22].
Johnson, Kaplan & Marsh (1996) Professional Teaching Portfolios: A Catalyst for Rethinking Education [Online] Available: http://educ.queensu.ca/projects/action_research/jjohnson.htm [1997, November 22].
Lankes, Anna Marie D. (1995) Electronic Portfolios: A New Idea in Assessment. ERIC Digest EDO-IR-95-9 [Online] Available: http://ericir.syr.edu/ithome/digests/portfolios.html [1997, November 24].
Los Angeles County Office of Education (1997) Portfolios: Students, Teachers, & Electronic. [Online] Available: http://www.lacoe.edu/pdc/second/portfolio.html [1997, November 22].
Miller, Sandra (1997) Using HyperStudio to Create Electronic Portfolios - A Beginner's Guide to Using HyperStudio 3.0 [Online] Available: http://www2.kpbsd.k12.ak.us/schools/northstar/EP.F/EP.HOW.TO [1997, November 12].
Teachnet (1997) Selling Yourself. Creating the Ultimate Teaching/Interview Portfolio. [Online] Available: http://www.teachnet.com/how-to/portfolios/index.html [1997, November 22].
University of Minnesota (1997) Teaching Portfolio [Online] Available: http://www.umn.edu/ohr/ptf/portfolio.html [1997, November 22].
University of Tasmania (1997) Preparing Your Teaching Portfolio [Online] Available: http://www.utas.edu.au/docs/cult/portfolio.html [1997, November 22].
Yannarella, Karen (1997) Electronic Portfolios: A Technology Trend in Authentic Assessment. [Online] Available: http://udel.edu/~66335/assess.htm [1997, November 22].
UNH Future Faculty Program (1996) Planning Your Teaching Portfolio: A Brief Guide. [Online] Available: http://unhinfo.unh.edu/teaching-excellence/guide.html [1997, November 22].
Teaching Portfolio Web Links (1997) [Online] Available: http://www.ell.wayne.edu/fls/teachptf.htm [1997, November 22].
How to Create an Electronic Portfolio (1997) [Online] Available: http://www.sv.k12.ks.us/port/how.html [1997, November 12].

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1	2	3	4	5
Limited experience with desktop computer - able to use mouse, menus, run simple programs	Level 1 PLUS proficiency with a word processor, basic e-mail and Internet browsing; enter data into a pre-designed database	Level 2 PLUS able to build a simple hypertext (non-linear) document with hypertext links (using either a hypermedia program like HyperStudio, Adobe Acrobat Exchange, or an HTML WYSIWYG editor)	Level 3 PLUS able to record sounds, scan images, output computer screens to a VCR; design an original database	Level 4 PLUS multimedia programming or HTML authoring; create QuickTime movies live or from tape; program a relational database

Table 1: Level of Teacher Skill (Relative Ease of Use)

1	2	3	4	5
No computer	A single computer with 8 MB RAM, 80 MB HD, no AV input/output	One or two computers with 16 MB RAM, 250+ MB HD, simple AV input (like QuickCam)	Three or four computers, one of which has 32+ MB RAM, 500+ MB HD, AV input and output, scanner, VCR, video camera, high-density storage device (such as Zip drive)	Level 4 PLUS CD-Recorder, at least two computers with 48+ MB RAM Optional: video editing hardware and software

Table 2: Level of Technology Required

	Relational data base	Hypermedia "card" file (including templates)	Multimedia authoring software	WWW Pages in HTML	Acrobat Reader (PDF files)	Integrated "Office" Software Slide Shows	Proprietary software
Common development tools	FileMaker Pro	HyperStudio Digital Chisel	Macromedia Authorware, Director	Adobe PageMill, Claris Home Page	Adobe Acrobat Exchange 3.01	Microsoft Office, Works, AppleWorks	Grady Profile Persona Plus
Structure & Links	Structured fields/records/ files linked together by common fields	Electronic cards (screens) linked together by "buttons"	Icon-based or time-based multimedia authoring environment	WWW pages viewed with a Web Browser (Netscape or Explorer) using links created in HTML	Postscript-based pages that can be navigated sequentially, or using bookmarks, links, or buttons	Slide Shows (i.e., PowerPoint)for presentation or "Binder" (Office) to link documents together	Varied: Grady Profile has Hypercard base Persona Plus uses relational database engine
Player available	Yes	Yes	Self-contained	Browser (free)	Reader (free)	Yes (PowerPoint) No (AppleWorks)	Yes (Grady) ? (Persona)
Advantages	Flexible reporting Network-friendly Web accessible Cross-platform	Widely accessible in classrooms Construction tools included	Most flexibility in development CD-ROM Cross-platform	Web-accessible Cross-platform	Web-accessible Cross-platform Create files from any application Ideal for CD-R	Widely accessible software. Cross-platform	Pre-designed and structured
Dis-advantages	Limitation of size of files Requires player	Not web-accessible View limited to screen size	Steep learning curve	Multimedia (video) not well integrated Complex authoring	Size of files Limited construction tools	Not directly web-accessible Ease of creating hypertext links. Requires original application to read.	Grady: not Web-accessible, Mac only, inflexible Persona: highly complex
Ease of Use* (Table 1)	4 to develop 2 to use	3 to develop	5	2 with editor 4 without	2	3	2 (Grady) ? (Persona)
Technology Required (Table 2)	3	3	5	4	4	3-4	2 4
Cost (with Ed. discounts)	$49	$39-$199	$150-$1,000	$49-$79	$49	$49-$500	Grady $199 Persona ?

Table 3: Comparison of Portfolio Construction Tools

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